

## Claims

I claim:

- 1 1. A method of adhesive bonding comprising:
  - 2 providing an adherend;
  - 3 providing a substrate;
  - 4 providing a photocurable adhesive;
  - 5 contacting said adherend and said substrate with said photocurable adhesive
  - 6 composition containing an adhesive and an effective amount of microspheres; and
  - 7 photocuring said adhesive composition to form an at least partially cured
  - 8 adhesive composition whereby said adherend and substrate are bonded together.
- 1 2. The method of claim 1 wherein said photocuring includes exposing said adhesive
- 2 composition to an effective dose of ultraviolet radiation for a predetermined time.
- 1 3. The method of claim 2 wherein said dose is 40 - 120 J/cm<sup>2</sup>.
- 2 4. The method of claim 3 wherein said dose is 90 - 110 J/cm<sup>2</sup>.
- 1 5. The method of claim 1 wherein said at least partially cured adhesive composition is
- 2 at least 90% fully cured.
- 1 6. The method of claim 5 wherein said at least partially cured adhesive composition is
- 2 at least 95% fully cured.
- 1 7. The method of claim 1 wherein said microspheres are made of a ceramic material.
- 1 8. The method of claim 7 wherein said microspheres are solid substantially throughout
- 2 their volume.
- 1 9. The method of claim 8 wherein the diameters of said microspheres are about 40
- 2 microns or less.

1 10. The method of claim 1 wherein said effective amount is about 35 - 75 wt.% of said  
2 adhesive composition.

1 11. The method of claim 10 wherein said effective amount is about 60 - 65 wt.% of said  
2 adhesive composition.

1 12. The method of claim 1 wherein said microspheres are made from silicate.

1 13. The method of claim 12 wherein said silicate is an alumino-silicate.

1 14. The method of claim 13 wherein said alumino-silicate is an alkali alumino-silicate.

1 15. The method of claim 1 wherein the adhesive composition is a pseudoplastic  
2 material.

1 16. The method of claim 1 wherein the thermal coefficient of expansion of the adhesive  
2 composition in the photocured state is less than that of said adhesive in the  
3 photocured state.

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